

NON-PUBLIC?: N
ACCESSION #: 8905300038
LICENSEE EVENT REPORT (LER)

FACILITY NAME: South Texas, Unit 2 PAGE: 1 of 3

DOCKET NUMBER: 05000499

TITLE: Reactor Trip Due to Spurious Actuation of a Reactor Trip Breaker
EVENT DATE: 04/15/89 LER #: 89-013-00 REPORT DATE: 05/15/89

OPERATING MODE: 1 POWER LEVEL: 024

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR
SECTION
50.73(a)(2)(iv)

LICENSEE CONTACT FOR THIS LER:
NAME: Charles Ayala - Supervising Licensing
Engineer TELEPHONE: (512)972-8628

COMPONENT FAILURE DESCRIPTION:
CAUSE: X SYSTEM: COMPONENT: MANUFACTURER:
REPORTABLE TO NPRDS:

SUPPLEMENTAL REPORT EXPECTED: No

ABSTRACT:

On April 15, 1989, Unit 2 was in Mode 1 at 24 percent power. At 0517 hours a reactor trip occurred when the Train S reactor trip breaker opened unexpectedly. A Reactor Trip System actuation subsequently occurred on "Power Range Negative Rate". The reactor was brought to an orderly shutdown and no unexpected post-trip transients occurred. The cause of this event is unknown. The reactor trip breakers and associated circuitry were tested. Additional diagnostic activities were attempted, however no problems were found.

NL.LER89013.U2

END OF ABSTRACT

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DESCRIPTION OF OCCURRENCE:

On April 15, 1989, Unit 2 was in Mode 1 at 24 percent power. At 0517 hours a reactor trip occurred when the Train S reactor trip breaker opened unexpectedly. This resulted in the dropping of the control rods and The subsequent Reactor Trip System actuation on "Power Range Negative Rate". main turbine tripped on the reactor trip and an automatic feedwater isolation occurred. The operators immediately manually started Auxiliary Feedwater Pumps #22, #23 and #24 and tripped the Steam Generator Feedwater Pumps per procedure. They subsequently secured the steam driven Auxiliary Feedwater Pump #24 to limit the cooldown. Steam Generator 2D water level dropped to the low-low level which caused an automatic initiation of Auxiliary Feedwater. The remaining non-running pump #21 started as required by the actuation signal. Steam driven pump #24 attempted to start, however, it tripped on overspeed. The pump is designed to start from a standstill. Since it had not yet completed its coast down from the previous manual start, the introduction of steam to the rotating turbine resulted in a turbine overspeed before the control system could respond. A trip under these circumstances is normal. The Main Steam Isolation Valves were subsequently closed to limit heat loss through the secondary system and terminate the transient. The NRC was notified of this event at 0840 hours.

With conditions stabilized in mode 3, troubleshooting was performed on the Train S reactor trip breaker. Troubleshooting included cycling of the breaker, terminal connection tightness checks, wiring scheme checks, and visual inspections. No problems were noted, but the breaker was removed and a replacement breaker installed to allow more detailed investigation at a later date. Westinghouse representatives reported that other plants have had problems with the undervoltage trip assembly and driver card of reactor trip breakers. Maintenance then tested the undervoltage trip assemblies and shunt trip assemblies of both the Train R and S breakers with no problems noted. They also verified the wiring and connections in the Solid State Protection System (SSPS) cabinet for the undervoltage driver card. No problems were noted. Applicable surveillances were performed on the breakers and the breaker control circuits with satisfactory results. Recorders were installed for a period of approximately two weeks in the SSPS cabinets to monitor the trip voltage of the breakers. No problems were noted.

CAUSE OF EVENT:

The reactor trip occurred because of a spurious trip of a reactor trip breaker, either due to a breaker fault or due to a spurious trip signal which cleared before it was recorded. The exact cause of the breaker trip is not known.

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ANALYSIS OF EVENT:

Unplanned Reactor Protection System actuation is reportable under 10CFR50.73(a)(2)(iv). The reactor tripped as required and the Engineered Safety Features operated as expected. No unexpected post trip transients occurred and there was no safety injection actuation. There were no adverse radiological or safety consequences as a result of this event.

CORRECTIVE ACTION:

The reactor trip breaker was inspected and tested to verify operation to specifications. No problems were found with the trip breaker or associated circuitry. The trip breaker was replaced with a spare breaker. The undervoltage trip driver card was swapped to the other trip circuit so additional trips, if they occur, can be associated with a component.

ADDITIONAL INFORMATION:

The breaker which opened is a Westinghouse Type DS-416 low voltage circuit breaker.

There have been no previous events reported regarding reactor trips caused by spurious reactor trip breaker operation.

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The Light
company P.O. Box 1700 Houston, Texas 77001 (713) 228-9211
Houston Lighting & Power

May 15, 1989
ST-HL-AE-3100
File No.: G26
10CFR50.73

U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, DC 20555

South Texas Project Electric Generating Station
Unit 2
Docket No. STN 50-499
Licensee Event Report 89-013 Regarding a Reactor

Trip Due to Spurious Actuation of a Reactor Trip Breaker

Pursuant to 10CFR50.73, Houston Lighting & Power (HL&P) submits the attached Licensee Event Report 89-013 regarding a reactor trip due to a spurious actuation of a reactor trip breaker. This event did not have any adverse impact on the health and safety of the public.

If you should have any questions on this matter, please contact Mr. C.A. Ayala at (512) 972-8628.

G.E. Vaughn
Vice President
Nuclear Operations

GEV/BEM/rf

Attachment: South Texas, Unit 2 LER 89-013

NL.LER89013.U2 A Subsidiary of Houston Industries Incorporated

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Houston Lighting & Power Company

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cc:

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